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The requirement that the handicapped be given special consideration as prerequisite to state participation in the Land and Water Conservation Fund Program is stated, and the following groups of handicapped are specified: the physically, visually and aurally handicapped, and those persons with special health problems; the mentally retarded; the emotionally disturbed; and the multiply handicapped. Their limitations and what can be done to compensate for them are discussed. Modification of playgrounds and facilities and equipment for swimming, camping, fishing, and boating is described; national, state, and private agencies in several areas which can help are mentioned and their addresses are given. Case histories are provided of a self guiding nature trail in Aspen, Colorado, camping in San Francisco, California, and adaptation of recreation facilities in New York State (including park planning, access, toilet facilities, swimming pools, picnic areas, play areas, and miscellaneous facilities). Sixty-four references are cited. (JD)

Outdoor Recreation Planning for the Handicapped

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April 1967

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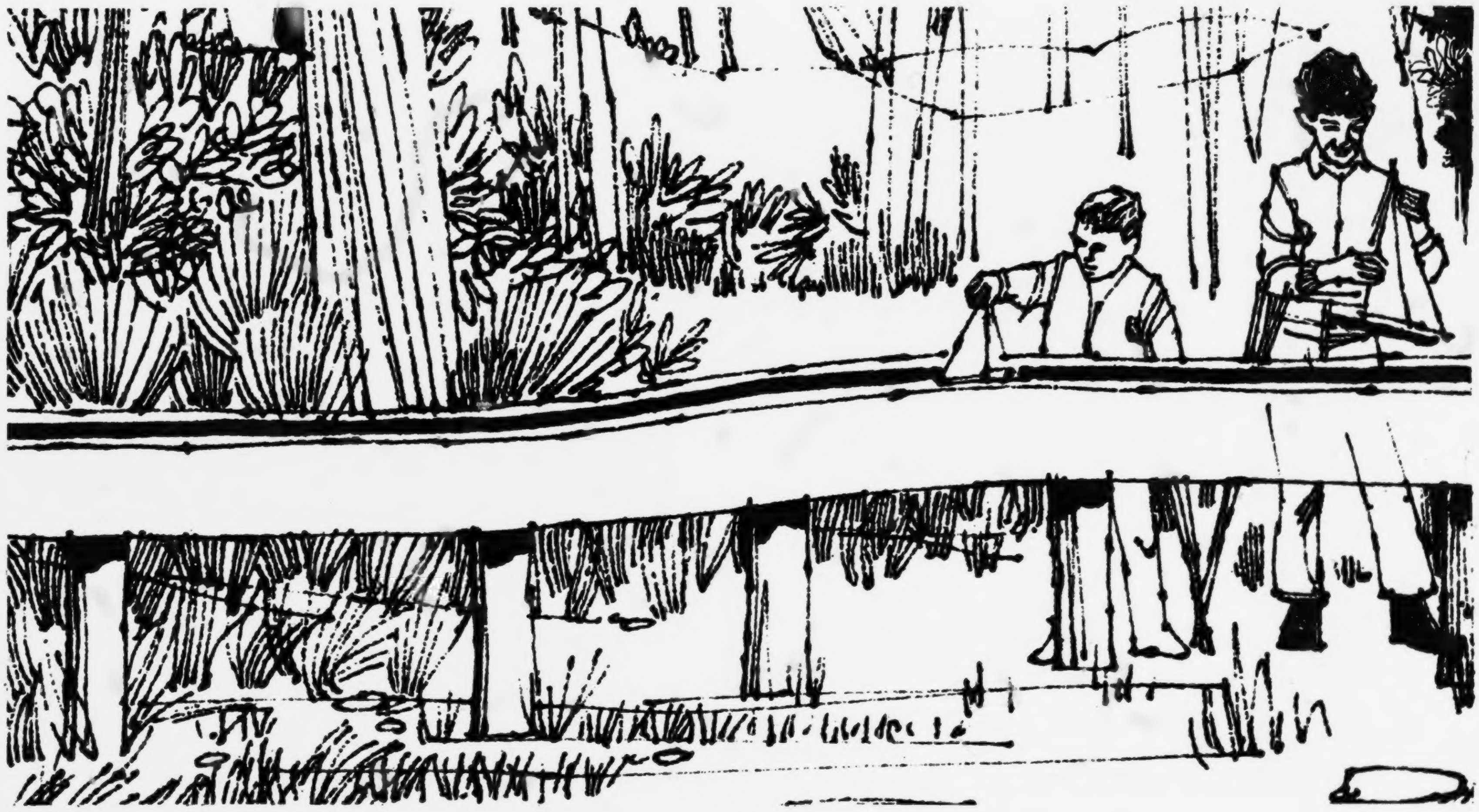
Bureau of Outdoor Recreation

Technical Assistance Bulletin

OUTDOOR RECREATION PLANNING FOR THE HANDICAPPED

PREPARED IN COOPERATION WITH THE
NATIONAL RECREATION AND PARK ASSOCIATION



Foreword

OUTDOOR RECREATION PLANNING FOR THE HANDICAPPED is a technical assistance bulletin issued by the Bureau of Outdoor Recreation. It is designed to provide helpful information to planners, administrators, and interested individuals. The bulletin is issued under the authority of Public Law 88-29 which authorizes the Secretary of the Interior to "provide technical assistance and advice to and cooperate with States, political subdivisions and private interests, including nonprofit organizations, with respect to outdoor recreation."

OUTDOOR RECREATION PLANNING FOR THE HANDICAPPED is an outgrowth of the increased concern to improve outdoor recreation oportunities for the handicapped. The final manuscript was prepared with the help of Dr. Morton Thompson, formerly with the National Recreation and Park Association.

We hope this publication will stimulate thoughtful consideration of ways in which outdoor recreation opportunities for the handicapped can be integrated into all recreation areas and facilities.

Edward C. Crafts

Edward C. Crafts
Director

Handicaps need not be a barrier to outdoor enjoyment. (Photo: San Francisco Center for the Handicapped, No. 1)

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ACH

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With this bus everyone can go. (Photo: San Francisco Recreation Center for the Handicapped, No. 2)

Introduction

Recreation in the out-of-doors offers a broad range of opportunities and experiences that enhance our lives. People with disabilities have the same needs and desires for these opportunities as non-disabled persons. Participation in outdoor activities can give the handicapped great enjoyment and help them to strengthen their independence and self-direction.

It is clearly evident, however, that great numbers of disabled persons are not receiving the benefits of our nation's recreation resources. The severity of their disabilities, architectural barriers, nonacceptance by society, and slowness of the recreation profession to adjust its programs and facilities to their needs all have contributed to a serious lack of opportunity.

Although we have come a long way in accepting and caring for the handicapped, especially with respect to treatment, education, and rehabilitation, there is much left that should be done in the field of outdoor recreation.

By making outdoor programs and facilities available to the disabled we can prevent them from being "recreationally handicapped." The purpose of this bulletin is to suggest methods of adapting outdoor recreation services so they can be enjoyed by the handicapped, too.

Enjoyment of the out of door should be an opportunity for everyone. (Photo: San Francisco Recreation Center for the Handicapped, No. 3)

Land and Water Conservation Fund

The Bureau of Outdoor Recreation requires that all comprehensive statewide outdoor recreation plans, prepared as a prerequisite to State participation in the Land and Water Conservation Fund Program, consider needs of the handicapped. The Bureau recognizes that the disabled must be given special consideration if they are to enjoy benefits of the out-of-doors. States and localities are urged, therefore, to consider the needs of the handicapped in both planning and administering programs relating to outdoor recreation.

Who Are the Handicapped[1]

The handicapped include men, women, and children who suffer from a variety of physical and emotional disabilities.

The 1960 White House Conference on Children and Youth defined a handicapped child as one who cannot play, learn, work, or do the things other children his age can do, or who is hindered in achieving his full physical, mental, and social potentialities because of a disability. This definition also can be applied to handicapped adults.

It is estimated that 19 million persons in the United States are physically disabled, that 5½ million are mentally retarded, and that 18 million are mentally ill.

We commonly think of the handicapped as living apart from society in institutions. However, a majority of them live in their own homes in the community.

Some are severely disabled and for the most part are homebound. But others are not, and can easily participate in community programs when they have access to facilities.

The Physically Handicapped

There are many types of physical disabilities. Commonly thought of disabled groups are those who suffer from orthopedic conditions, such as amputees, paraplegics, and post-polio individuals, the blind or partially sighted, and the deaf. Most of these people are not ill, but their disabilities may keep them from fully participating in recreation.

Some conditions that cause disability include those listed and briefly described below:

ARTHRITIS

More than 11 million people in the United States suffer from this painfully crippling disease. Arthritis affects joints, bones, nerves, muscles, tissues, tendons and blood vessels.

CARDIO-VASCULAR DISEASES

Diseases of the heart and blood vessels are the leading cause of death in the United States. It is estimated that at least 10 million people have some form of heart or blood vessel disease.

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[1] *"Recreation for the Handicapped in the Community Setting" (mimeographed pamphlet), National Recreation and Park Association, Consulting Service on Recreation for the Ill and Handicapped, 1965.*

CEREBRAL PALSY[2]

Approximately 600,000 persons in the United States are afflicted with this disease of the central nervous system that affects the cerebrum. Since the brain controls the individual physically and mentally, cerebral palsy can severely limit his activities.

MULTIPLE SCLEROSIS[3]

Approximately 300,000 persons have multiple sclerosis which destroys the protective covering of the spinal cord's nerve fibers. Nerve message impulses controlling movement, vision, hearing, and speech, are distorted and sometimes completely blocked.

MUSCULAR DYSTROPHY[4]

About 200,000 men, women, and children in the United States suffer from muscular dystrophy. This disease is characterized by progressive weakening of the muscles.

The Mentally Retarded

Mental retardation refers to below average general intellectual functioning. It is associated with impairments of maturation, learning, and social adjustment. The mentally retarded experience difficulty in ability to learn as well as in applying what is learned to everyday problems.

There are different degrees of mental retardation. These are described somewhat by the following categories:

A hike in the woods is rewarding. ***(Photo: San Francisco Rehabilitation*** *Center for the Handicapped, No. 4)*

(1) The mildly retarded who are limited with respect to academic achievements, but, who may attain a level of self-sufficiency as adults through special education; (2) the moderately retarded who can learn to care for personal needs, travel by themselves in their own neighborhood, and do many useful tasks in the home or sheltered environment; (3) the severely retarded who have potential for self-care, but whose economic potential is severely limited; and (4) the profoundly retarded who usually cannot become independent in eating and dressing.

The Emotionally Disturbed

Mental illness refers to some form of emotional disturbance that prevents individuals from functioning adequately in major types of social activities such as family life, working life, and community life.

It is estimated that one out of ten persons in the United States suffers from a mental illness. At least 250,000 children with less serious disorders receive treatment each year at mental clinics.

Out-patient clinics are becoming much more common for treatment of the emotionally disturbed.

The Multiple Handicapped

Often, the disabilities described above do not occur singly. Many individuals are afflicted with multiple handicaps. For example, a physically handicapped person may have serious emotional problems or be mentally retarded, or he may be physically handicapped and emotionally distrubed and mentally retarded.

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[2] *Paralysis due to an intercranial lesion.*

[3] *A chronic disabling disease of the central nervous system.*

[4] *Progressive atrophy of the muscles with no discoverable lesion of the spinal cord.*

What Are the Handicappeds' Limitations

To help the recreation planner put his imagination and knowledge to work, it is useful for him to know the many difficulties disabled people have in using recreation facilities. Some of these problems are listed below:[1]

1. *Limitation in walking—*
   a. *difficulty in walking distances* because of muscle weakness due to disease or age;
   b. *difficulty in walking on non-level and non-smooth surfaces* because of 1) reliance upon braces, crutches, or prosthesis; 2) cardiac, pulmonary or neurological problems which affect strength, flexibility, and coordination; 3) sensory disability affecting balance; or 4) impairment of joints;
   c. *inability to walk* but ability to propel themselves in a wheelchair on level and certain graded surfaces;
   d. *inability to propel a wheelchair* because of extensive disability and must be accompanied by an attendant.
2. *Limitations in seeing and/or hearing—*
   a. *difficulty in seeing and/or hearing warnings and safety hazards* because of limited vision or audition due to disability or age;
   b. *inability to see and/or hear warnings and safety hazards* because of extensive disability.
3. *Limitation in the use of hands and arms—*
   a. *difficulty in opening gates or doors, manipulating equipment, etc.,* because of muscle and joint weakness, or because of the necessity to manipulate crutches, a cane, or a wheelchair;
   b. *inability to open gates or doors, etc.,* because of extensive disability in the muscles and joints of the hands and arms.
4. *Limitation in understanding information, directions, and warnings—*
   a. *difficulty in reading printed signs* because of partial sight or intellectual impairment;
   b. *inability to read printed signs* because of blindness or severe intellectual impairment.

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[1] *Elliott M. Avedon, "Enable the Disabled,"* Recreation, *Vol. LVIII, No. 2, (February 1965), pp. 70-72.*

Children engage in competitive sport in an adapted physical education program. (Photo: The Rehabilitation Record, No. 1)

What Can Be Done

In general, disabled people can enjoy the same basic outdoor recreation experiences as do the non-disabled if the opportunity is provided. However, recreation planners too often neglect the special needs of the handicapped.

The following discussion is designed to suggest ways in which programs and facilities may be adapted to provide for these special needs.

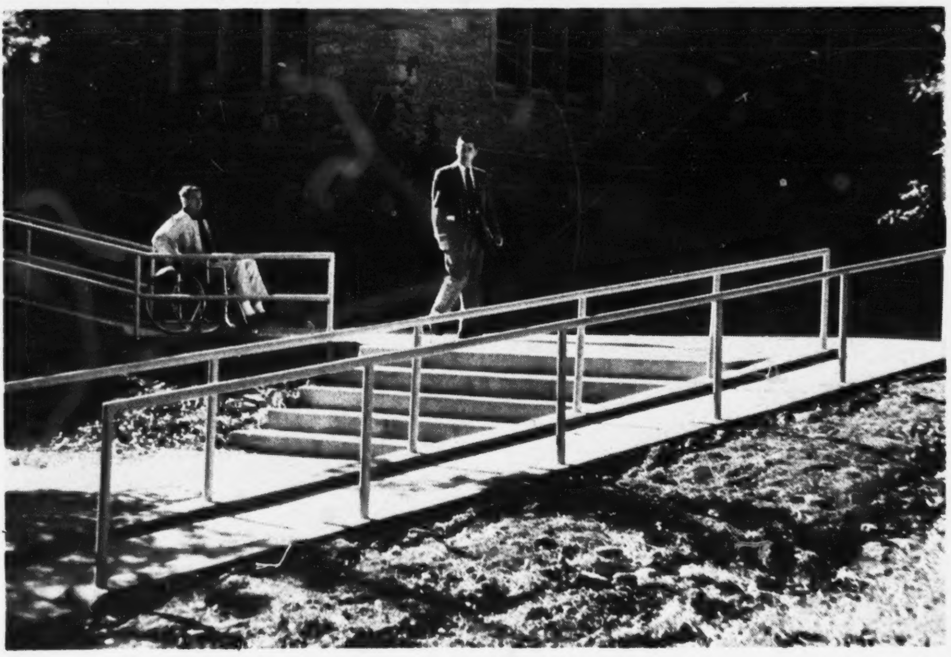
General

1. Recreation officials should include the disabled in existing recreation programs whenever possible.
2. Recreation programs for the handicaped should be planned for adults as well as for children.
3. Outdoor recreation planning should provide for year-round participation by the handicapped.
4. Program planners and officials should consider the following three levels of recreation participation by disabled persons:

—Those able to participate in outdoor recreation activities with the non-disabled when facilities and programs are adapted for their use.

—Those who for physical or psychological reasons are not ready to recreate with non-handicapped persons. Existing recreation areas can be reserved at certain hours for their use if facilities are adequately adapted. These areas can be used for instructional periods to prepare the disabled for

The step-ramp combination gives access to facilities. (Photo: The President's Committee on Employment for the Handicapped, No. 1)



Telephones are lowered for convenient use. (Photo: The President's Committee on Employment for the Handicapped, No. 2)

recreation with the non-disabled.

—Those so severely disabled or socially withdrawn that they need a sheltered environment. Special areas should be set aside for them. In some instances recreation facilities and programs must be brought to their homes, hospitals, or institutions.

5. The usual design and construction of facilities often limit or prevent handicapped people from participating in outdoor recreation. Thoughtful planning can eliminate architectural barriers.[1]

   The United States of America Standards Institute pamphlet, "USA Standard Specifications for Making Buildings and Facilities Accessible to, and Useable by, the Physically handicapped"[2] recommends adaptations of facilities that allow disabled persons to assist themselves. For example, steps are augmented by paths and ramps for wheelchairs; doorways are made wider and easier to open; grab-bars are placed in restrooms; drinking fountains are lowered; step-down curbs are modified; and so forth.

In planning for the handicapped it is recommended that existing facilities be modified to accommodate their needs. It is urged also that maximum access be provided to all activities in which disabled persons might participate or be spectators. In some cases this may mean special transportation service.

In its *Statewide Comprehensive Plan for Outdoor Recreation, New York State, Part II, Municipal Responsibility*, the State of New York has developed guidelines for the adaptation of recreation facilities for the physically handicapped. These are reproduced in the Appendix.

Modify Facilities and Programs

Public recreation administrators should study their outdoor recreation resources such as playgrounds, beaches, lakes, campsites, and fishing areas with the view to making them available for the disabled. For example, a wood or asphalt walk across a beach to the water's edge makes it possible for both ambulatory and wheelchair - ridden persons to get to the water. In

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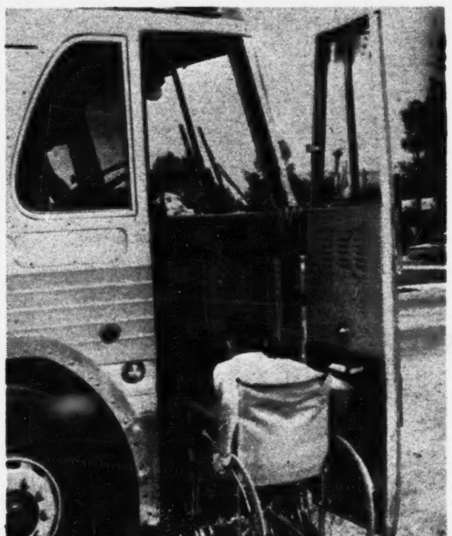
[1] *Much informative material on this subject is included in "Proceedings of the National Institute on Making Buildings and Facilities Accessible to and Useable by the Physically Handicapped" (November 21-24, 1965, Chicago, Illinois). The proceedings may be ordered from Architectural Barriers Project, National Society for Crippled Children and Adults, 2023 West Ogden Ave., Chicago, Illinois 60612.*

[2] *See bibliography, page 56, for complete reference information.*

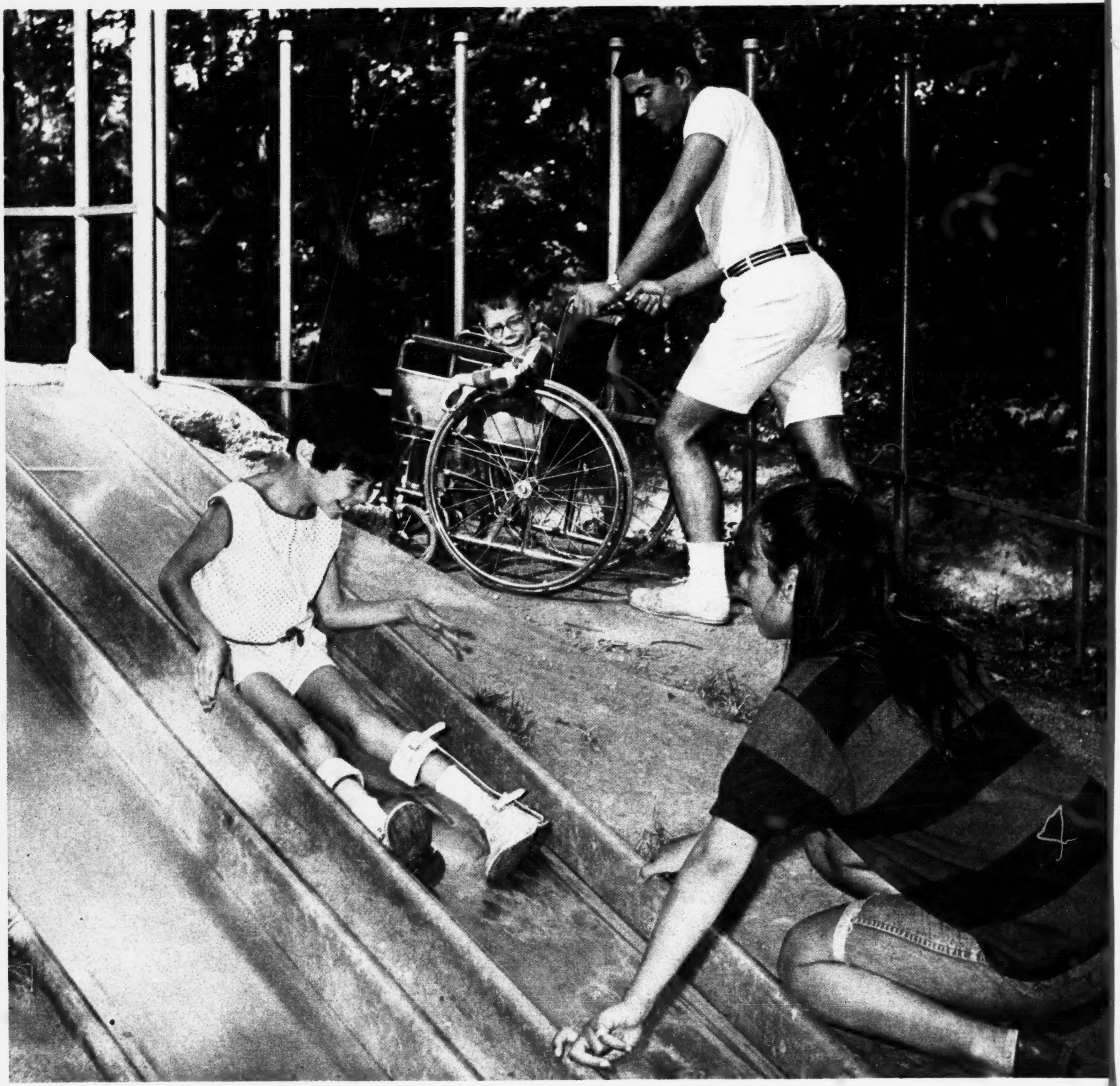
Miniature golf is a fascinating challenge. (Photo: The Rehabilitation ***Record, No. 2)***

Ramps are an easy access from sidewalk to street. (Photo: National ***Society for Crippled Children and Adults, Chicago, No. 2430E2)***

Simple modification makes public transportation accessible. (Photo: The Rehabilitation Record, No. 3)



Playground equipment is made functional and attractive for all Children.
(Photo: United Cerebral Palsy Association of Nassau County, N.Y., No. 1)



a lake, a series of safety lines with floats enable handicapped persons to get into the water by holding onto the lines. Ramps give access to the shoreline for wheelchair fishing.

The following are other modifications that are suggested for consideration:

PLAYGROUNDS

Playgrounds can be made functional and attractive for all children. They provide an opportunity for the disabled child to participate in outdoor activity early in life with his more fortunate peers.

Playgrounds should be made accessible to all children by conforming to "USA Standard Specifications for Making Buildings and Facilities Accessible to and Usable by the Physically Handicapped" mentioned above. This includes modifications of the customary width of gates, toilet facilities, height of drinking fountains, surfacing and width of walks, and provision of rails and ramps where necessary.

Play equipment has been designed for playgrounds that are used by disabled children.[1] A slide built into a mound with a graduated ramp-type path curving to the top is an example. Handicapped children who can walk pull themselves up the path by holding onto a series of multicolored posts along the pathway. Two parallel slides are imbedded in a hill so that children cannot fall out. These dual slides make room for everybody.

A child with difficulty walking enjoys this playground (Photo: United Cerebral Palsy Association of Nassau County, N.Y., No. 2)

Playground equipment named the "mountain climber" is a series of metal blocks with nonslip footing that ascends gradually to a platform on top. Rails consisting of heavy ropes support the children in climbing. The effect gives an impression of mountain climbing.

Facilities for crawling through circular metal webbing, playhouses, playtables, and bobbing horses can also be used by both handicapped and non-handicapped children.

An effective technique for sand and water-play is to build sand and water tables at heights functional for both wheelchair and ambulatory participants. If these tables are fairly long with curved dimensions even children in wheelchairs can sail their boats downstream.

Permanent tables and stools installed at different heights are practical for quiet games, sitting and eating. An eye-bolt with a safety belt attachment enables severely disabled children to stand without falling while working on a craft or playing table games.

A maze of multicolored poles with adequate spacing for wheelchairs is popular in chase and tag games, wheel-toy maneuvering, and exercise for children who can pull themselves from pole to pole.

A small paved area with a retaining fence can be used for active games, group games, and relays. A shuffleboard court superimposed on the surface can be designed on a much smaller scale than usual so that all children can play successfully. A set of low basketball backboards (6 feet) make it possible for children in wheelchairs to enjoy the game. A metal wire retaining fence should be installed as a curved structure so that balls missing the backboard will rebound toward the child.

All playground areas should be connected by blacktop or other types of paved walks. The hard surface walk should have a wide circular turn-around section for wheelchairs.

Swings can be used by handicapped children too. For the severely disabled, a box-type swing with a guardrail would be the most practical and safe. Some swings probably have to be built on a larger scale than those now used for very young children.

Although throwing and catching is one of the most important play skills, playgrounds usually are not equipped for such a purpose. If a parent takes a child to the playground to play catch, unless the child has some skill, the parent will spend most of the time chasing the ball. In addition, instructions on how to catch and throw cannot be given effectively since the parent must stand many feet from the child.

A solid smooth surface wall serves this activity as well as many others.[2] The parent stands beside the child to show him how to catch and throw, gives him specific targets on the wall to throw at, and backs him up when the ball rebounds. A smooth, hard ground surface of asphalt or concrete leading up to the wall insures "true" bounces and provides an area for court games.

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[1] *Frank J. Hayden, "Playground Designs Suited for the Needs of Retarded Children," (mimeographed pamphlet).*

[2] *By the United Cerebral Palsy Association, Nassau County, Roosevelt, Long Island, New York, New York.*

A rust-proof wheelchair aids entrance into a pool. (Photo: Iowa Society for Crippled Children and Adults, No. 1)

A water level deck makes pool access easy. (Photo: Wisconsin Easter Seal Society for Crippled Children and Adults, No. 1)

The wall should be made into compartments or courts by dividers perpendicular to the wall and extending about 10 feet from it. Dividers should be far enough apart to provide adequate court surface for games such as handball. The principle function of dividers is to prevent interference of one player by another.

The walls should be situated so that its back side can be used also. Climbing equipment or niches of projecting bricks could be attached to the wall so that it can be climbed.

For young persons with several physical disabilities or severe mental retardation, it may be desirable to segregate recreation opportunities or to provide special facilities on the playground. An example is a play wall.

SWIMMING FACILITIES

Since swimming is a major activity of summer outdoor programs for the handicapped, accessible swimming facilities are indispensable. Many disabled persons can learn to swim because water bouyancy helps them to keep afloat.

Lake Front Swimming Area

Some advantages of a lake area are:

—The activity area is greater.

—The activity area is more varied, offering in addition to swimming, boating, fishing, and study of marine life.

Lake fronts should have good sandy beaches free of rocks and stones. The lake should have a gradual increase of depth in water so that swimming is safe and enjoyable.

If the lake does not have graduated depths, it is advisable to construct one or more wood cribs of varying depths to accommodate handicapped swimmers. An H-shaped dock provides two natural crib areas of segregated and safe learning for non-swimmers and handicapped swimmers. The cribs should have a minimum of six foot wide docks and graded ramps with rails descending into the water.

Outdoor Swimming Pool [1]

Some advantages of a pool are:

—Ability to regulate water temperature.

—Control of cleanliness through an effective filtration system.

—Smaller area so that swimmers can be supervised closely.

The swimming pool should be of adequate size and should have a very good filtration system. Existing pools for the handicapped average about 25 feet by 75 feet. They have a large area for shallow water with a gradual change in depth.

The pool should have a very wide deck with a slip-proof surface. The water level should be flush with the pool deck to allow for easy entrance into the pool.

Steps with handrails leading into the water should be built with short risers and a wide step. A ramp with parallel bars will enable persons with unsteady gaits to enter the pool by themselves.

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[1] *W. B. Schoenbohm, "Planning and Operating Facilities for Crippled Children," Springfield, Illinois, Charles C. Thomas Company, 1962.*

Special Equipment

- —Several camps for the handicapped have built carts to wheel the severely handicapped into the water. Rustproof wheelchairs can also be used effectively.
- —A Hoyer lift, with which a person may be lifted from a wheelchair and lowered into the water, can be placed in a sleeve in the concrete at the water's edge.
- —A supply of folding wheelchairs and walkers are needed in varying sizes and types.
- —Chairs with casters that can be wheeled into a floor level shower bath are very helpful for the severely disabled.

CAMPING

Some handicapped persons may attend regular day camps with the non-disabled. It should be a goal of all special camp programs to prepare the disabled for participation in regular camps wherever possible.[1]

Most camp programs however, are geared to active, energetic participants. Those hindered by braces or crutches have difficulty competing. Under such circumstances a handicapped person may feel frustrated and alone. In addition, some camp directors are reluctant to accept the responsibility of admitting disabled persons.

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[1] Schoenbohm, op. cit.

Nature crafts are enjoyed at a summer day camp. (Photo: San Francisco Recreation Center for the Handicapped, No. 5)

A curb at wheelchair height allows easy use of pool. (Photo: The Rehabilitation Record, No. 4)

An alternative is special day camp programs for the handicapped. Camps are adapted to the disabled's needs. The terrain is fairly level with blacktop pathways connecting all facilities so that both ambulatory and wheelchair cases can move easily and safely. Toilet and drinking water facilities are designed for the handicapped's use.

Some type of shelter is provided in the form of small buildings, tents, or open pavilions. These areas are ramped if necessary but preferably are built flush with the ground. Such shelters are used for rainy day programs, overnight sleep-outs, shade areas and arts and crafts. Outdoor fireplaces adjacent to the shelter areas serve for cookouts. For an art program, several outdoor blackboards can be installed with space underneath to maneuver wheelchairs close to the boards. Experiments in sleep - away camping have proven that the handicapped can participate with the non-handicapped in most camp activities as long as facilities are accessible to them. A case history of a camp program for teenagers and adults with physical disabilities is summarized on page 21.

FISHING AND BOATING

Fishing can be an important phase of an outdoor program depending upon the availability of a lake, pond, or other water area.

If there is a lake or pond stocked with fish nearby, ramps with protective rails can be extended beyond the shoreline to provide fishing for the handicapped as well as for the able-bodied.

In a day camp run by the United Cerebral Palsy Association an abandoned concrete foundation on the property was converted into a fishing tank. The area was covered, and ramps were extended over the water from each end of the foundation. Children are wheeled onto the ramp and fish through openings made in the protective screening.

Pontoon boats with space for persons in wheelchairs are ideal for boating. Such boats ride dock-height out of the water so that wheelchairs can be rolled directly onto them. They are very sturdy and provide a high degree of safety. Fifteen to twenty persons can be accommodated at one time on each boat.

Support Research

There is far more research needed in the field of outdoor recreation to provide recreational leadership, facilities, and resources necessary for the handicapped.

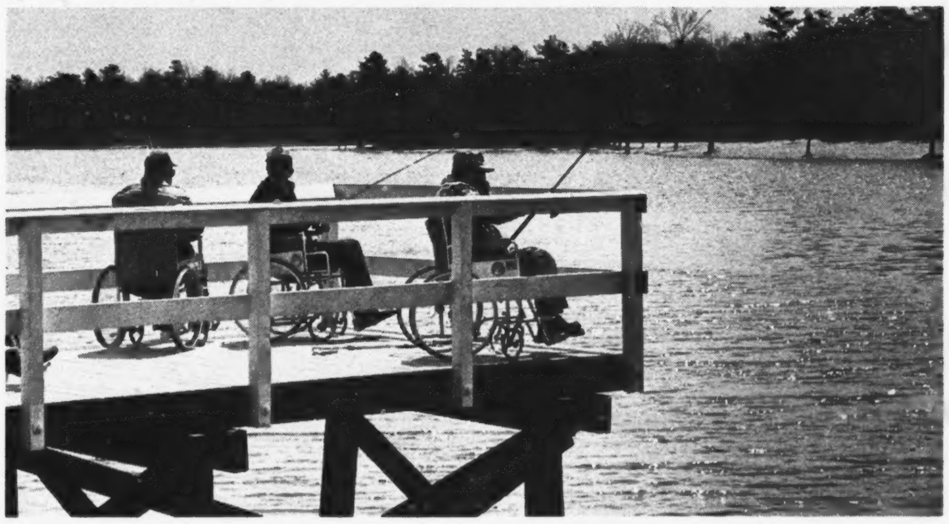
Include the handicapped in all recreational activities. (Photo: San Francisco Recreation Center for the Handicapped, No. 6)

The following are some ideas for research projects:

- —The special recreation needs associated with specific disabilities such as blindness, multiple sclerosis, and cerebral palsy.
- —Ways to adapt existing outdoor recreation programs for persons with certain kinds of disabilities such as muscular dystrophy, mental retardation, and arthritis.
- —How facility and activity adjustments can be made to accommodate the handicapped for outdoor recreation in a family group.
- —Development of outdoor recreation program guidelines for the handicapped.
- —How the attitudes of non-handicapped groups using outdoor recreation facilities can be changed favorably to facilitate use of these facilities by the handicapped.

A successful catch is made from a protective ramp. (Photo: United Cerebral Palsy Association of Nassau County, No. 3)

A projected pier provides safe fishing. (Photo: State of New Jersey Department of Conservation, No. 1)



Who Can Help

There are a number of Federal, State, local, and private agencies that are concerned with the needs of the handicapped. Many can provide valuable information and service concerning recreation programming. A listing of some of these agencies may be found in the Appendix. Many have local chapters or affiliates.

Each State has agencies through which Federal assistance programs are administered. Officials of these agencies can be of considerable help to recreation planners.

In addition, each State usually has a parks and recreation agency, a director of special education, a supervisor of physical education, and an agency dealing in matters of vocational rehabilitation. Officials of these agencies are interested in recreation services for the handicapped.

Many counties and cities with large local park and recreation departments are actively engaged in providing opportunities for the handicapped. Santa Rosa, San Francisco, San Mateo, Philadelphia, and Chicago park and recreation departments are good sources of information for recreation planning.

Organizations that may assist in obtaining information on needs of disabled persons in a particular community include local boy and girl scout groups, church groups, 4-H clubs, YMCAs, YWCAs, parent organizations, Junior Chamber of Commerces, civic organizations, and the like. These organizations may welcome an opportunity to share in recreation projects for the handicapped. Libraries and schools should be contacted also.

Cycling is enjoyed on tandem bicycles in a public park. (Photo: San Francisco Recreation Center for the Handicapped, No. 7)

Kids have a good time in this modified shower. (Photo: United Cerebral Palsy Association of Nassau County, N.Y., No. 4)

There are many Federal agencies that provide information and service to recreation planners. Within the Department of Health, Education, and Welfare there are the following offices:

Administration on Aging—Under this agency's grant program, States designate a single agency responsible for developing service and opportunities for the elderly in the home community. These State agencies are listed in the Appendix. Officials of these agencies can help planners meet the needs of older citizens.

United States Office of Education—The Office of Education's objective is to foster development of institutions, agencies, and organizations that fulfill the intellectual and cultural needs of people. Through its direct service programs, personnel training research and development, and construction assistance, this agency improves programs for the handicapped, including recreational needs of the mentally retarded.

Within this framework, the Office of Disadvantaged and Handicapped is responsible to the U.S. Commissioner of Education. The former's functions are to provide leadership, information, and coordination for Federal educational programs concerning the handicapped.

U. S. Public Health Service—A number of branches of the U. S. Public Health Service offer research and demonstration grants concerning recreation.

—Division of Mental Retardation cooperates with State and local organizations to provide health services for the mentally retarded. Recreation both as a form of therapy and as a means of human development is included as a service supported by this agency.

—Office of Grants Management, Office of the Surgeon General, offers grants for studies, experiments, and demonstrations for new and improved community health services for chronically ill and aged.

—National Institute of Child Health and Human Development offers special pilot project grants and special demonstration grants for recreation. Also included are hospital improvement grants that take recreation into consideration.

Vocational Rehabilitation Administration—This office offers research and demonstration grants concerning recreation service to disabled adults; provides graduate traineeships for specialists in therapeutic recreation Service.

Welfare Administration — A number of Bureaus within the Welfare Administration offer assistance concerning outdoor recreation.

—Bureau of Family Services provides assistance for plans to strengthen family life. Outdoor recreation is an essential part of such plans.

—Children's Bureau cooperates with national, State, and local organizations in planning for the development and extension of services to all children and youth.

Information on the above programs can be requested from the Department of Health, Education, and Welfare, 330 Independence Avenue, S.W., Washington, D. C. 20201, or from its appropriate Regional Offices. See list in the Appendix.

In addition to the Department of Health, Education, and Welfare a number of other Federal departments and agencies provide technical or financial assistance for outdoor recreation. A summary of these agencies and their programs is available in the Bureau of Outdoor Recreation publication, *Federal Assistance in Outdoor Recreation,* which may be obtained from the Government Printing Office, Washington, D. C. 20402, for 35¢ a copy.

The Land and Water Conservation Fund Program administered by the Bureau of Outdoor Recreation provides grants of up to 50 percent to States and through States to localities for outdoor recreation acquisition and development. Such projects must be in accord with the State outdoor recreation plan. While this is not a program specifically for aiding the handicapped, it is one source of financial assistance that can help provide facilities. For detailed information contact the appropriate Regional Director listed in the Appendix.

The Governor of each State has appointed a Liaison Officer to cooperate with the Bureau of Outdoor Recreation in administration of the Fund Program. They are knowledgeable about their State's efforts to consider the disabled in outdoor recreation planning and they are cooperating with State mental retardation planning coordinators. A list of these individuals may be obtained from the Bureau.

CASE HISTORIES

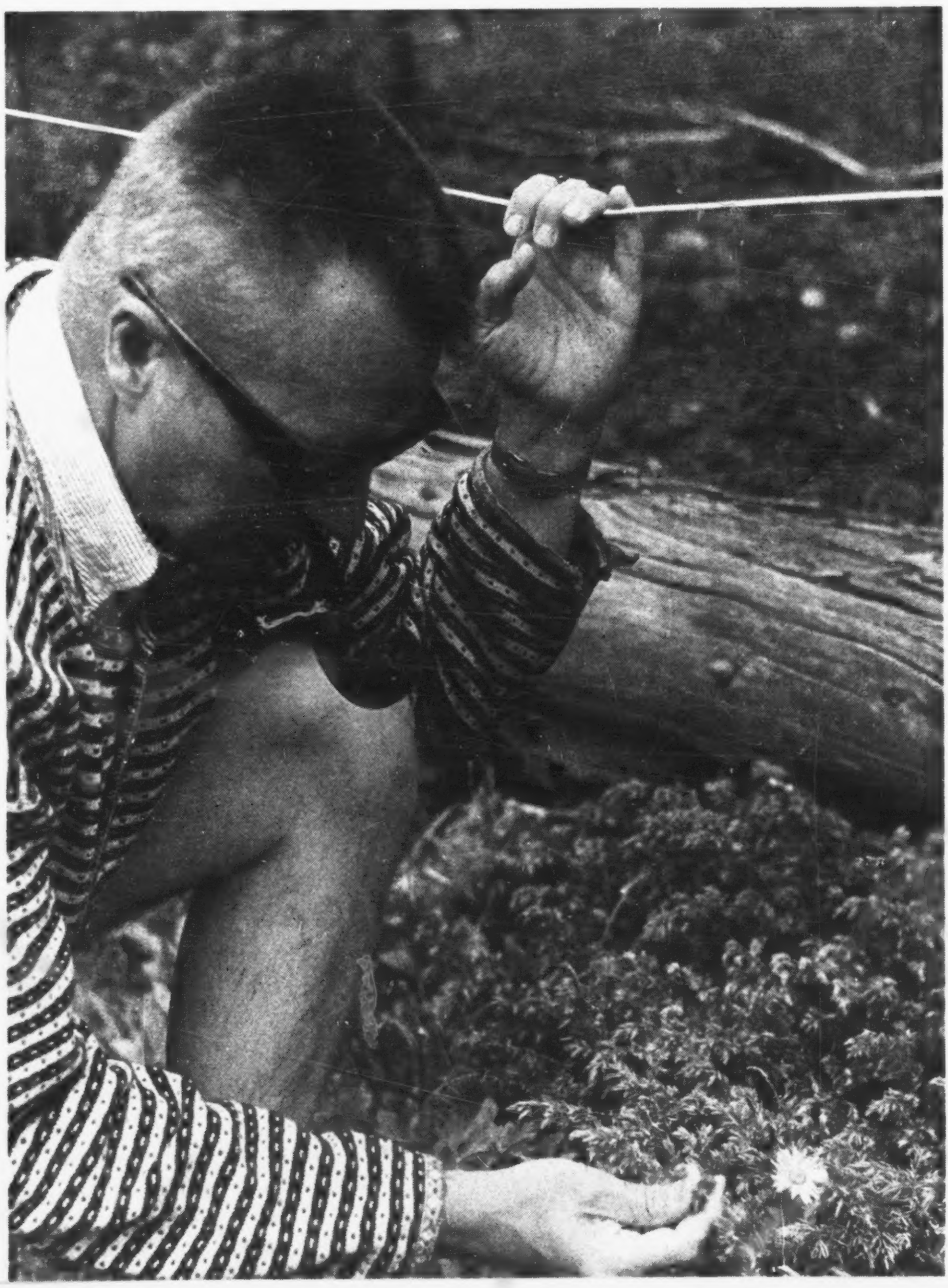
A Self Guiding Nature Trail for the Blind[1]

PREFACE

The ensuing account describes a self-guiding nature trail that is located in Aspen, Colorado. The trail is regarded as a prototype or experimental trail and it is hoped that the lessons learned here can be applied to other trails in other regions. If the trail proves successful, it may encourage others to build self-guiding trails for both sighted and blind persons in a variety of natural environments. It is not beyond the realm of possibility that there may some day be a network of such trails across the country in woodlands, along streams, in the mountains, and even deserts.

The author would like to thank those who have made this trail possible: Mr. Harry Taylor, the Forest Ranger of the White River National Forest and his crew, Mr. Jack Snobble and Mr. Bert Drake, teachers and students of the Rocky Mountain School, Mr. Les Willis, Mr. Don Puder, and Mr. James Cox, biology teachers, and Dr. Alfred Etter who is responsible for writing the biological descriptions of the twenty-two stations. The author is also grateful to Dr. Bruce Bryant who wrote a geological description of the area.

This report was published under the auspices of the School of Education at the University of California, Berkeley, Dr. Abraham S. Fischler, Advisor.



The sense of touch helps all of us to explore nature. (Photo: Robert B. Lewis, No. 1)

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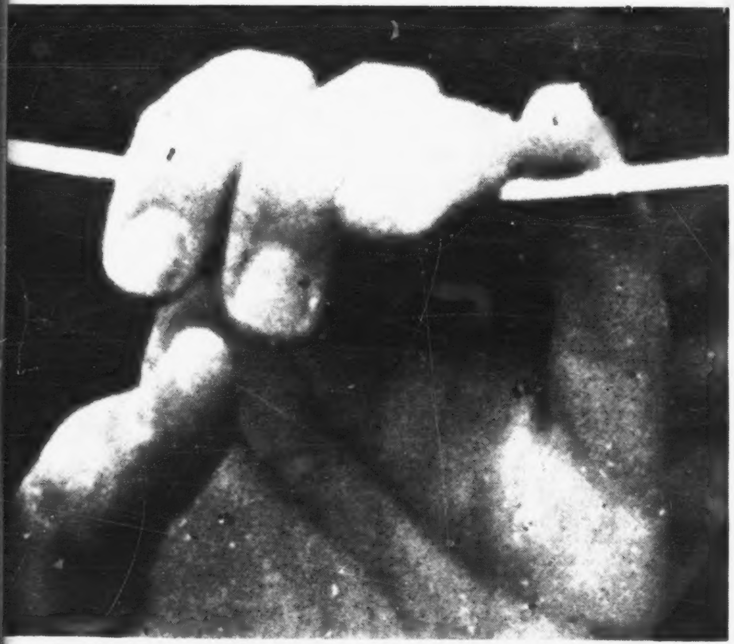
[1] *By Robert B. Lewis, Science Education Consultant, Aspen, Colorado.*

DESCRIPTION OF THE TRAIL

The subtle impact of the natural environment upon the human mind was understood by the great California naturalist John Muir when he wrote, "The influence of pure nature permeates one's very flesh and bones . . . the mind is fertilized and stimulated and developed like sun-fed plants. All that we have seen here enables us to see with surer vision." But, what about those who cannot see? Must they be denied those experiences that an unspoiled natural environment can yield to each of us who would seek them out? One of the answers to this question might lie in a self-guiding nature trail.



Many sighted people have esperienced the thrill of nature vicariously through the blind when we have taken them on a stroll through the woods. Blind children are especially enchanted by such an experience. Those who have lost their sight prefer, quite naturally, to be as independent of others as possible. This is the best way because personal contact with nature on a one-to-one basis results in a personal discovery which is, after all, the most meaningful and best remembered.

A nature trail for the blind, therefore, must be a self-guiding trail. It was the biography of Louis Braille that inspired the nature trail. As a boy, Braille was not the first to realize that the other senses can be relied upon to partially compensate for the loss of sight. But, what Braille has done to enable the blind to "see" through their finger tips is a matter of history.

The tactile sense can be most useful to all of us when attempting to explore the mysteries of nature. The smoothness of a stream-washed granite outcrop tells us much about the forces that have been at work on these rocks. The plant kingdom yields many secrets to the touch—bark, leaves, flowers, ferns, mosses, lichens, and even the slippery algae to be found on streamside boulders can teach us much about a world that some have never seen.

The sense of hearing for the most of us is taken for granted. We hear, but we rarely learn how to truly listen to what we are hearing. The sound of the wind in the trees, a rippling brook, a falling pine cone, the snap of a twig under foot, contrasted with the chattering of squirrels and songs of birds when carefully listened to can add a new dimension to a woodland adventure.

The sense of smell may serve us well in the out of doors. Even though we lead busy urban lives, which of us can forget the smell of grass after a rain, the scent of flowers and the pungent odor of pine needles? Many common plants can be identified by the average person with the help of his nose. We have all experienced the thrill of recalling some object or event, buried in the past, when our nostrils are assailed by an odor that we associate with that object or event. We can only guess the importance of the role that the sense of smell plays in learning and recall.

For most of us the three senses —touch, hearing, and smell—are generally subordinated to the sense of sight. It is only when the sense of sight is lost that we grasp at contact with the outside world through our other senses. What was once an auxillary sense now becomes a vital link with reality, with life itself. If tomorrow we were to lose our sight, we would listen as never before to sounds we have never heard. We would search out textures, shapes, and even become aware of the subtle differences in temperature of objects that we have never noticed before. Likewise, our sense of smell would become more acute to give us further clues to our environment.

The senses have been termed "gateways to the mind." If one gateway is closed, then those remaining become the more important. It is this fact combined with the faith of such naturalists as John Muir who believed that nature can contribute much to the mind of mankind, that has led to the development of a self-guiding nature trail. The trail is located ten miles east of the town of Aspen, Colorado.

The trail winds for nearly a quarter of a mile through a dense spruce and fir forest, over a lateral glacial moraine, down to the edge of a shallow rushing stream and across a small alpine meadow. The trail itself can be reached by crossing a foot bridge over the headwaters of the Roaring Fork River. The Forest Ranger and his crew built the bridge and planted the posts that carry the guide lines that define the trail. Biology teachers and students supplied the labor for building the approaches to the bridge, leveled the trail, and cleared away fallen logs and limbs where necessary. Every effort was made to keep the trail as natural as possible hence only hazardous objects were removed. The terrain was chosen to provide variety under foot—stony ground, pine needled carpeted paths, inclines, a small portion of a spaghnum bog were carefully worked into the circuit.

There are twenty-two stations along the trail at which a person may pause and read, in Braille, about the plant and animal life inhabiting that region. The text at these stations was written by Dr. Alfred Etter, a nationally known naturalist and conservationalist. A sample of Dr. Etter's descriptions follows:

> Listen before you return to the roar of the Roaring Fork, for the sounds of the spruce and fir forest. What you hear will depend greatly upon the time of year, the time of day, and on whether it has rained or not. On rainy days, especially, you may hear the repeated calling of the Olive-backed Thrush.
>
> You may be aware of the chattering of the Red Squirrel. You may hear the distant calling of the Olive-sided Flycatcher from the pinnacle of some tall spruce or fir tree.
>
> Occasionally the whirring and whistling of the tiny Hummingbird intrudes on the quietness of the flowered places in the woods. Nature is constantly at work in many ways to carry on the continuity of living things that makes this earth unique and interesting. We have many woodland neighbors around us who were here long before we came. In our management of the earth, we must make room for them. In the scheme of things, there is little doubt that they are as important as we.

One will not always be fortunate to hear birds at a given time of day along the trail, since birds are most active at dawn and dusk. This fact has prompted the development of a tape with pre-recorded bird calls and brief descriptions of the birds and their habits. Complete tapes are to be developed describing each of the stations for those who cannot read Braille. The small battery-powered tape recorders will be supplied by the National Forest Service, and can be checked out from the Forest Ranger.

No one can estimate how much creativity is lost to society when man loses contact with the inspiration of nature. It is fitting that if individuals, organizations and communities would like to make a contribution, they should consider the possibility of developing a self-guiding nature trail in their own areas.

It has been suggested that the nature trail be named for Louis Braille and that a hike down the "Braille Trail" will enable many to experience some of the wonders as inspired by nature as was Braille himself.

Camping For the Handicapped[1]

The 1964 Trip Camp Program of the Recreation Center for the Handicapped, Inc., San Francisco, is summarized below as a successful example of what others could do in this field.

Overnight trip camping was initiated on an experimental basis for teenage children who had outgrown day camping and in some cases for crippled children who had outgrown resident camping. The success of the program led the center to establish full-scale trip camping opportunities for a wide variety of severely handicapped children to participate in and to enjoy simple camping, unaccompanied by many of the modern conveniences felt necessary in other camps for physically handicapped children. An overnight trip was also planned for adults.

The overall objectives were:

1. To provide opportunities for leadership in advanced camping for those individuals who indicated a readiness for camping in more natural surroundings.
2. To create a group feeling of accomplishment and responsibility through living in a primitive type of camp setting.
3. To provide outdoor education and develop respect for natural resources through their enjoyment.
4. To acquire new skills in nature, fire building, cooking, campcraft, woodcraft, and pioneering.

In addition to the above objectives, the camp staff developed some specific goals which were designed to *Involve, Stimulate, Motivate,* and *Integrate.* They were as follows:

1. To encourage all participants to have fun and to participate actively in the program.
2. To keep activities lively and progressive.
3. To help participants learn skills, build confidence, and practice good camping.
4. To integrate handicapped persons with non-handicapped persons by providing opportunities for them to participate in activities enjoyed by other children their own age, i.e., horseback riding, visiting the Boardwalk in Santa Cruz, Mystery Spot, etc.

The camp trips were broken down into four age groups: Adults, older teens, younger teens, and pre-teens (day campers). Campsites selected were San Mateo Memorial Park, Leprochaun Woods, Big Basin Redwoods State Park, and Pfeiffer State Park, Big Sur. There was one two-day trip for 15 adults (11 more joined on the second day), three four-day trips for 43 older teens, two three-day trips for 26 younger teens, and one overnight trip for 25 pre-teens.

Over half of the participants were in wheelchairs. The types of disability included cerebral palsy, congenital malformations, blindness, deafness, post polio damage, muscular dystrophy, epilepsy, and spinal bifida.

Evaluation of Groups Participating

The younger teenagers and those with special emotional problems participated in three-day camping for the first time. This experience was highly successful and very practical. It allowed time for sufficient relaxation and permitted flexibility in the planning and scheduling of activities. This was an enthusiastic group of campers which were interested in all phases of trip camping.

The older and more experienced teenage campers participated in four-day camping trips. This allowed for more relaxed program planning, without over-fatiguing the more physically handicapped members. These campers participated more in the social skills afforded by a camping situation rather than the camping skills, which were "old-hat" to them. For the most part, this group expected to be waited on, and did not join willingly in the camp chores. Part of this attitude was due to the fact that there were more wheelchair cases and these campers were more severely handicapped than those in the younger group. In addition, they were older (16 to 21 basically) and tried to be more sophisticated.

To accommodate all, this modified table has seats of various heights. (Photo: United Cerebral Palsy Foundation of Nassau County, N.Y., No. 5)

Cook outs are great fun at camp. (Photo: San Francisco Recreation Center for the Handicapped, No. 8)

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[1] *By Janet Pomeroy, Director, Recreation Center for the Handicapped, Inc., San Francisco, California.*

The Adult group expressed a desire to try a three-day trip—if enough staff and volunteers could be assigned. Most of the adults need more physical care, are heavier, and therefore, more difficult to handle.

Trip Camp Program

Following are specific activities enjoyed by campers during the Trip Camp session:

Cooking—Campers participated in the planning of menus, shopping, packing food, cooking, and clean-up.

Campfires — The younger children conducted a great many skits and stunts, and participated in action songs.

Campfire programs for teenagers were less formal than for younger children, and included music, singing (both with instruments and without), the making and playing of simple instruments, drums and rhythm bands (which appealed most to older teens), discussions, both formal and informal; making of hot chocolate and special treats, i.e., popcorn, marshmallows, doughnuts, pies, etc.; group campfires, campfires with outsiders invited, and campfires given by State park rangers for all of the State park visitors; night hikes and astronomy.

Camp Skills and Crafts—Included the proper use of ground clothes, preparation and care of sleeping bags, sleeping areas, how to set up camp, axemanship, use of shelters, use of pocketknife, whittling, making of simple musical instruments, and rope and knot tyings.

Nature — The nature program, which was greatly enjoyed by all, included appreciation of the outdoors, learning to identify animals by their tracks, protection of food from animals at night, seeing and feeding animals in their natural habitat, identifying trees and plants native to a variety of camping areas, nature hikes, illustrated by State park rangers on nature and the historical significance of particular campsites, and nature games.

Boating—Boating and riding on surfboards were experiences greatly enjoyed by the campers.

Fishing—Both stream and lake fishing proved to be highly successful even for those persons confined to wheelchairs.

Horseback Riding—This activity was greatly enjoyed, especially by the younger teens. Many rode for the first time and were able to go on trails in groups.

Hiking—Hiking was done in the company of the whole group, or in small groups, just for enjoyment's sake, or for the sake of learning, and provided a very important activity for trip camping. Most campsites were chosen because they allowed a maximum number of paved or semi-paved and relatively flat trails for wheelchairs. The campers felt that they were surrounded on all sides by nature far from the sights and sounds of automobile traffic.

Swimming — Swimming, which proved to be one of the most popular sports, had the greatest participation. It provided not only a certain physical freedom for the more handicapped teenagers, but also provided an opportunity for young and older teenagers to mix with other non-handicapped teenagers. Air mattresses and tires allowed for the maximum amount of freedom in the water by the individual campers.

Excursions—the teens, especially the older teens, thoroughly enjoyed side trips that were taken to places such as the Mystery Spot and the Boardwalk in Santa Cruz. The older teens were greatly pleased to be able to mix with other teenagers at the Boardwalk. Beach activities which attract many teenagers such as shooting galleries and games of chance were greatly enjoyed by older teenage campers.

Camping Equipment

The overnight campouts were achieved without a great deal of Camping equipment. Camping is made simple where campers sleep on the ground, without tents. One tent was used for emergency and changing purposes—this tent was borrowed from a parent and was an umbrella tent which was easy to erect. Campsites were close to bathroom facilities.

Other equipment used included ground clothes, sleeping bags, air mattresses, blankets, urinals, toilet paper, lanterns (two) and white gasoline, flashlights, games equipment, ice chests (two), cooking utensils, and personal items of campers.

Adaptation of Recreation Facilities For the Physically Handicapped[1]

I. PARK PLANNING

a. *Organization:* In earliest master plan studies, consideration should be given to providing maximum access for handicaped persons to all activities in which they might participate or be spectators.

b. *Types of Handicap:* The following types of physically handicapped should be considered:

(1) Those confined to wheel chairs.
(2) Those who walk with difficulty including those with braces or crutches.
(3) Those who are blind or see with difficulty.
(4) Those who are deaf or hear poorly.
(5) Those who are badly coordinated or subject to palsy.
(6) Those who are infirm from age.

c. *Layout:* Major use areas suitable for any form of use by the handicapped should be connected by usable paths (see access) with frequent resting places if distances warrant. Spectator areas should be provided near interesting activities. Shelter from wind and sun should be provided at rest and spectator areas.

d. *Detail Design:* Structures and equipment which might be used by handicapped persons should be especially adapted to such use whenever possible (see below).

e. *Information:* Special signs and maps should direct wheelchair occupants and other handicapped persons to paths and facilities adapted for their use. Signs should be readable by those with impaired sight.

II. ACCESS

a. *Parking:* Stalls should be made 12′-0″ wide for both perpendicular and diagonal parking. Drop curbs should be provided at convenient locations for wheelchair access to walks. Avoid wheelchair circulation behind cars.

The park planner can make nature accessible to everyone. (Photo: San Francisco Recreation Center for the Handicapped, No. 9)

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[1] State of New York Statewide Comprehensive Plan for Outdoor Recreation, New York State, Part II, Municipal Responsibility. New York 1966.

b. *Walks:* Should have a minimum width of 48". Walk pavement should have a hard non-slip surface of concrete, sealed asphalt, etc. Walks should blend with the adjacent ground and have a minimum gradient. Care should be taken to minimize expansion joints and expansion joint filler which expands above the walk surface. Walks which cross drives or parking areas, should blend to the level of the drive or parking area by using drop curbs. Avoid steps and sharp breaks in grade in walks.

c. *Ramps:* Should be provided for access to facilities when required by topography. Ramps should be constructed with a non-slip surface; 37" minimum width between railings, but 72" wide for two-way circulation. The maximum gradient for ramps should be 8.33%; a preferred grade would be 5%, with smooth transition to upper and lower levels. Platforms on ramps should be provided at the top and bottom, at 30' intervals, and at all changes of direction. Handrails, preferably on both sides, should be 32" high, 2" from the wall, and extending at least 12" beyond the top and bottom of the ramp.

Curbs 2" high and 4" wide made of wood or concrete should be provided under handrails and adjacent to walls to prevent wheelchair scuffing rough walls or catching railing posts.

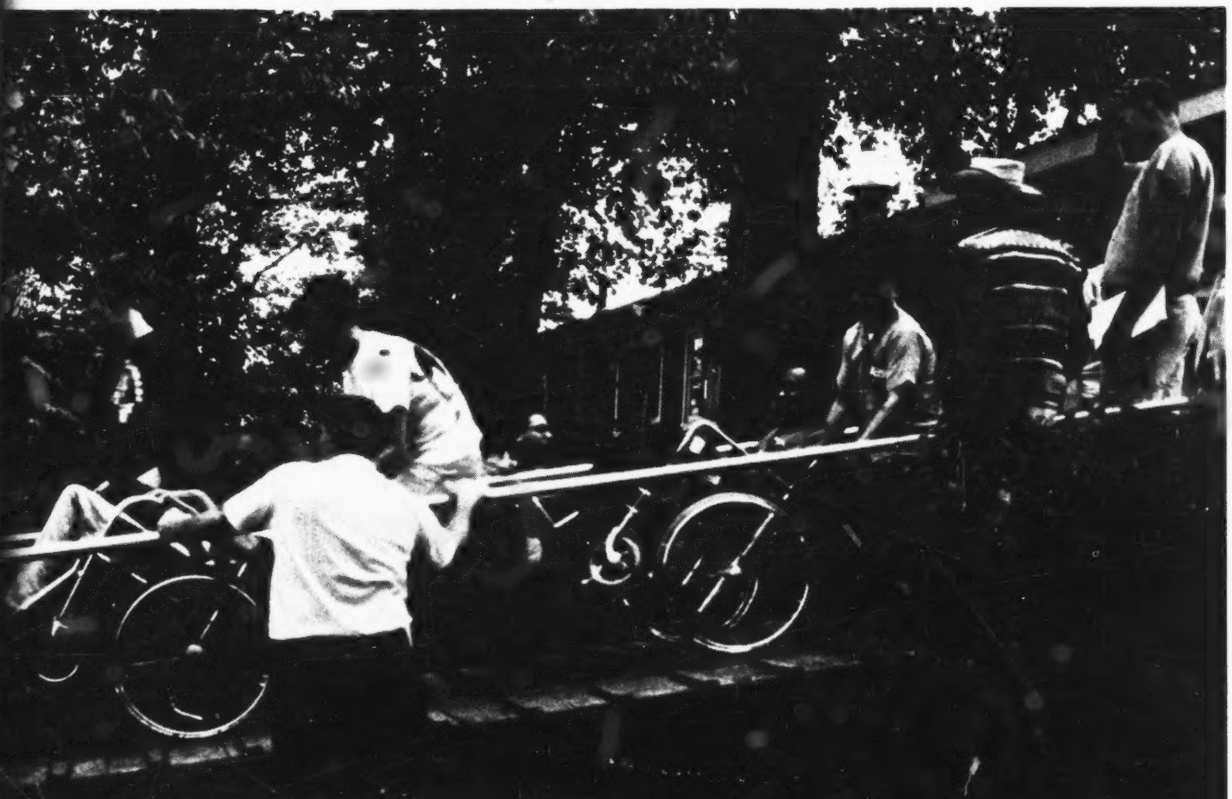
If because of extreme site conditions, the allowable maximum gradient for ramps cannot be maintained, ramps should still be constructed as a steep ramp is less of a barrier than steps, and a second party can be called for assistance.

d. *Stairs:* Stairs should have riser heights of standard size (6") but without having abrupt square nosing. Steps with forward sloping risers are better for physically disabled people. Railing should be set at 32" above the tread.

e. *Doors and Doorways:* Doors should have a minimum clear opening of 32" (preferably 36") and should be operated by a single effort. The floor, both on the inside and outside, should be level for a distance of 5 feet. As much as possible, thresholds should be flush with the floor.

f. *Door Hardware:* Each door should have three hinges with kick plates 16" high. Door closers should be the time-delay type. Vertical bar type, pull handles should be placed 36" from floor with an additional pull handle placed near the hinge to enable wheelchair occupant to close the door, if

Extreme site conditions require long ramps. (Photo: The Greater Chicago Chapter of the Muscular Dystrophy Association of America, Inc. Lake of the Woods Camp, Decatur, Michigan, No. 1)



door closers are not provided. Safety glass lights 6″x 42″ high can be placed 28″ above floor if privacy is not required. Metal edge strips 40″ high should be added to protect wood door.

III. TOILET FACILITIES:

a. *Toilet stall* should be 3′-0″ wide, 5′-0″ deep, with a door 32″ wide swinging out; handrails on each side, 33″ high parallel to floor; and a wall mounted water closet 20″ high.

b. *Urinals* should be floor mounted or, if wall mounted, the opening should be no higher than 19″ above floor and should be equipped with a horizontal handrail.

c. *Lavatories* with narrow aprons, mounted at a height of 30″ from the underside of apron to the floor. Plumbing should be placed high under lavatory to avoid legs and chair. Hot water and drain pipes should be insulated.

d. *Hand dryer* should be set at a 40″ maximum above the floor.

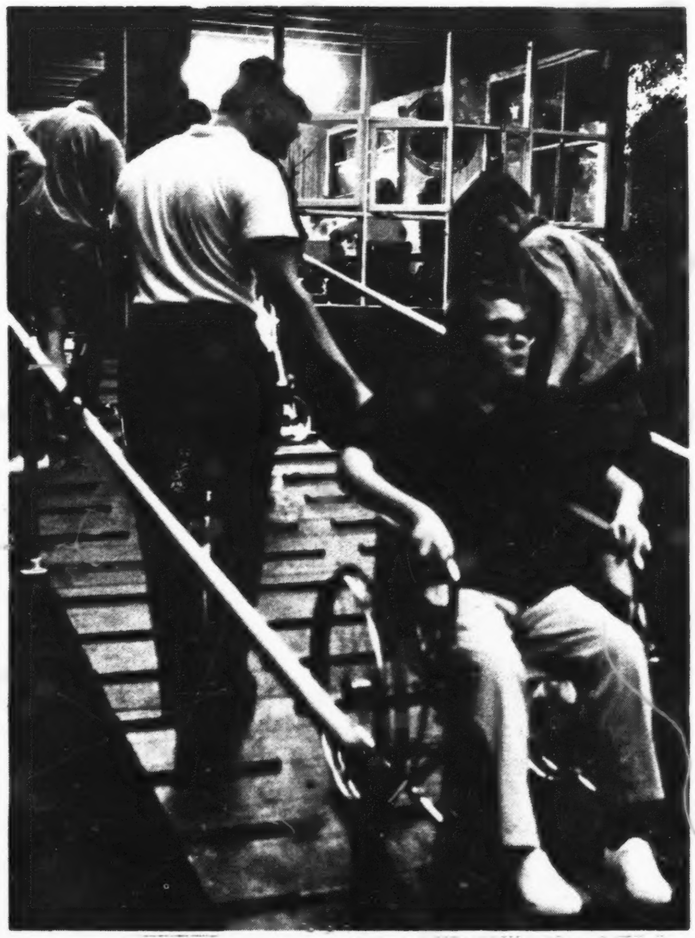
e. *Mirror* should be set no higher than 40″ above the floor.

f. *Circulation* in public toilets should be carefully checked for use by handicapped in wheelchairs.

IV. SWIMMING POOLS

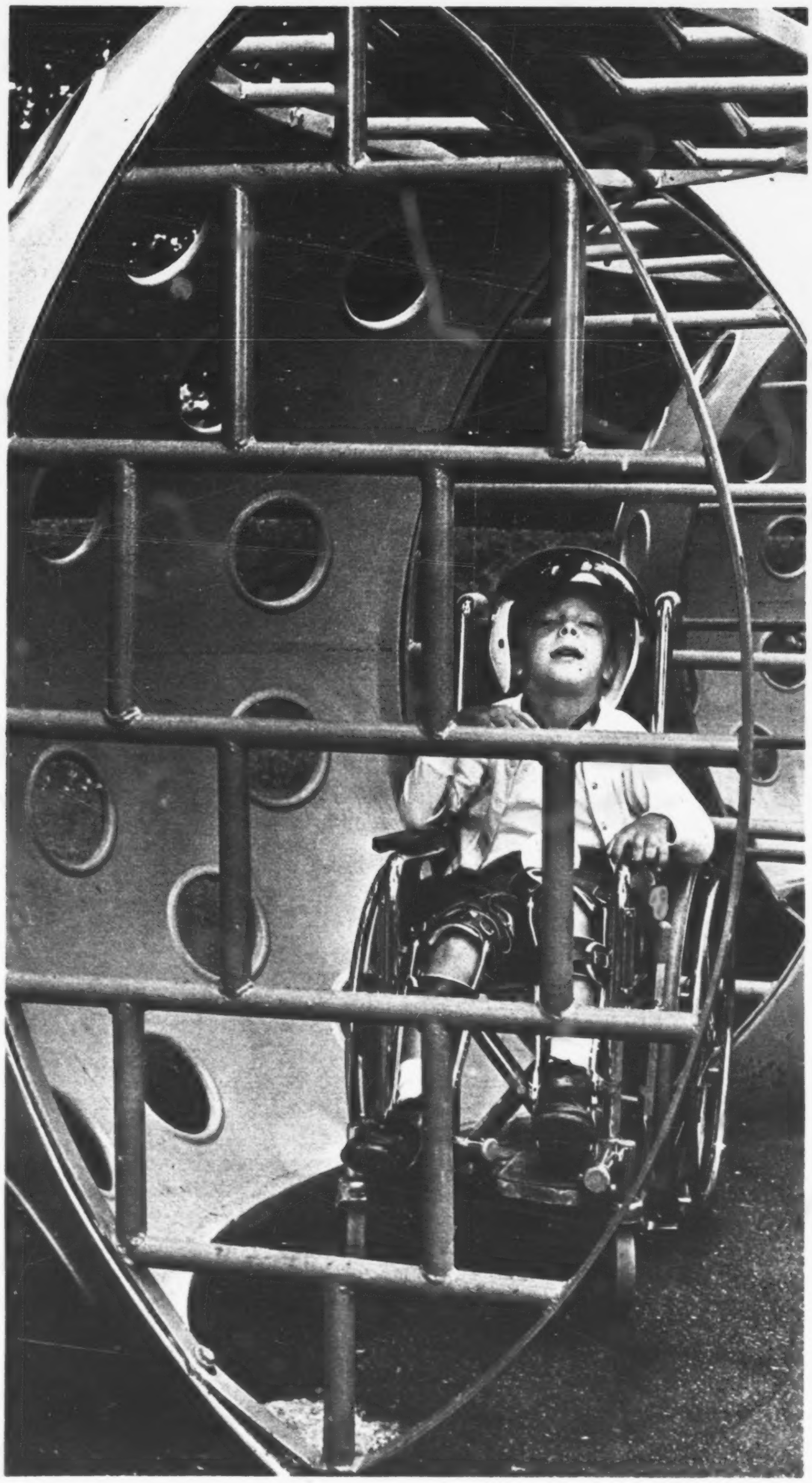
a. *Pools* can be made accessible in four ways:

1. Pool coping raised 19½″ to 20″ above pool deck.
2. Deck ramped down adjacent to pool coping on one side to provide a well 19″ to 20″ below coping.



A steep ramp is less of a barrier than steps. (Photo: The Greater Chicago Chapter of the Muscular Dystrophy Association of America, Inc. Lake of the Woods Camp, Decatur, Michigan, No. 2)

A pool is made accessible by a ramp. (Photo: Iowa Society for Crippled Children and Adults, No. 2)



3. A ramp provided on the inside of the pool.
4. An elevator provided in the pool.

(The most suitable method for public pools would be No. 2.) When coping is raised above the pool deck, the coping should cantilever over the deck area to provide room for wheelchair foot rest. Copings should have a smooth non-slip finish and adequate pipe handles should be provided on coping. Water level of pool should be as high as possible to top of coping (about 3″ or 4″). Skimmers would enable water level to be kept at this height in the pool.

b. *Locker rooms* should have ample circulation space for wheelchair, and benches should be omitted in certain locations.

c. *Changing areas* or cubicles should be provided without benches for women and possibly for men.

d. *Showers* should be individual cubicles for both men and women. Benches 19½″ high, faucets 36″ high and hose extension for shower spray should be provided. Handrails 36″ high around shower cubicle would be required. Cubicle should be large enough to permit transfer from a wheelchair to a bench by disabled persons. Shower curb should be omitted.

V. PICNIC AREAS

a. *Picnic tables* should be placed on a fairly level hard

Imaginative play equipment appeals to all children. (Photo: United Cerebral Palsy Foundation of Nassau County, N. Y., No. 6)

surface. Tables should have recessed legs at one end suitable for use by a wheelchair occupant. Underside of table should be 30″ from ground.

b. *Fireplaces* should be post mounted and set at a suitable height for wheelchair occupant.

VI. PLAY AREAS

a. Games that can be played by people in wheelchairs include:

1. Volleyball (lower net and light ball)
2. Basketball (hoop, no backboard)
3. Miniature golf (check access)
4. Fencing (not recommended for Public Parks)
5. Shuffleboard (standard and shortened markings)
6. Boccie (check access)
7. Croquet (must be tight lawn—maybe Zoysia)
8. Archery
9. Bowling (light ball)
10. Table games such as table tennis, etc.

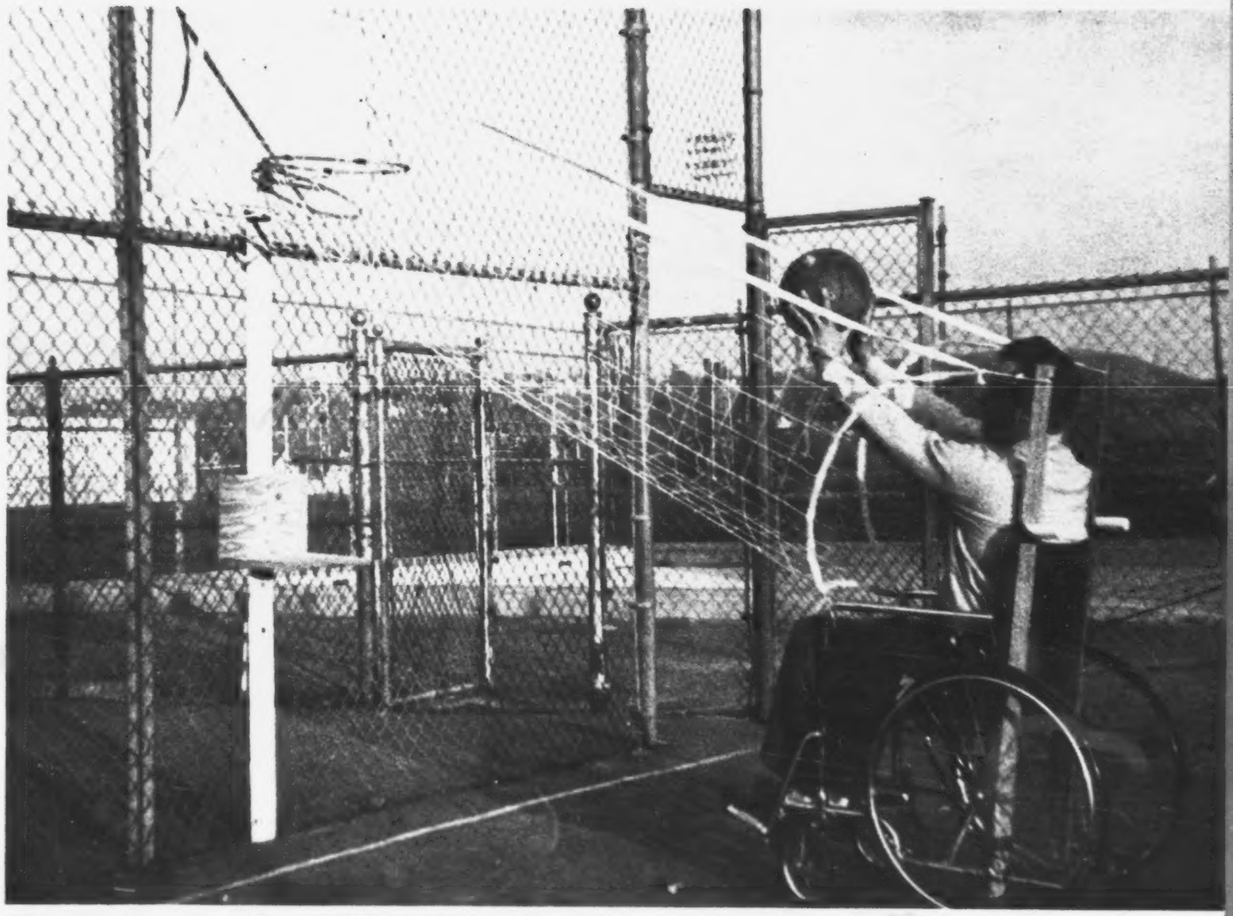
b. *Modifications* similar to those previously listed may be necessary, however, Zoysia grass may make a suitable surface for areas where a hard-surfaced pavement would be unsuitable.

VII. MISCELLANEOUS FACILITIES

a. *Public telephone* should be wall mounted with acoustic side shield and should be mounted 30″ above floor. (30″ to underside of telephone shelf with pay phone on shelf.)

b. *Food service areas* should have tables with height 30″ from the floor to underside of table. Cafeteria self-service areas should be adapted to wheelchair use.

c. *Drinking fountains* of standard free-standing type can be adapted for use by wheelchair occupant by placing a side mounted basin and bubbler 30″ above grade. If wall mounted drinking fountains are used they must be set at a height of 30″. *Note:* If drinking fountains are adapted to the 30″ height a step for children may be omitted.



Playgrounds can offer modified basketball equipment. *(Photo: National Recreation and Park Association, No. 1)*

Lowered water fountains are usable by all. (Photo: The President's Committee on Employment for the Handicapped, No. 3)

Agencies Providing Assistance

PRIVATE AND VOLUNTEER ORGANIZATIONS

Those concerned with needs of the handicapped that include recreation as part of their total concern:

American Foundation
for the Blind
15 West 16th Street
New York, New York 10017

American Orthopsychiatric
Association
11790 Broadway
New York, New York 10019

American Speech and Hearing
Association
1001 Connecticut Avenue, N.W.
Washington, D. C. 20036

Arthritis and Rheumatism
Foundation
1212 Avenue of the Americas
New York, New York 10036

Association of Rehabilitation
Centers, Inc.
828 Davis Street
Evanston, Illinois 60201

Muscular Dystrophy Association
of America, Inc.
1790 Columbus Circle
New York, New York 10019

National Association for
Retarded Children
420 Lexington Avenue
New York, New York 10017

National Foundation
800 Second Avenue
New York, New York 10017

National Foundation for
Neuromuscular Disease, Inc.
250 West 57th Street
New York, New York 10019

National Foundation for
Prevention of Accidents, Inc.
12 Pinehurst Avenue
New York, New York 10033

National Multiple Sclerosis
Society
257 Park Avenue South
New York, New York 10010

National Rehabilitation
Association
1029 Vermont, N.W.
Washington, D. C. 20005

National Society for
Crippled Children and Adults
2023 West Ogden Avenue
Chicago, Illinois 60612

United Cerebral Palsy
Association
321 West 44th Street
New York, New York 10036

Those providing major guidance, consultation, service and literature on recreation:

American Association for
Health, Physical Education &
Recreation
1201 16th Street, N.W.
Washington, D. C. 20036

American Red Cross
Washington, D. C. 20006

Comeback, Inc.
16 West 46th Street
New York, New York 10036

Joseph P. Kennedy, Jr.,
Foundation
Suite 402
1411 K Street, N.W.
Washington, D. C. 20005

National Recreation and
Park Association
1700 Pennsylvania Avenue, N.W.
Washington, D. C. 20006

National Therapeutic Recreation
Society
A branch of the National
Recreation and Park
Association
1700 Pennsylvania Avenue, N.W.
Washington, D. C. 20006

Other agencies are listed in the following directory of National organizations with park and recreation interest:

Twardzik, Louis F.
Sources of Assistance (A directory of National Organizations with Park and Recreation Interest)

Management Aid Bulletin
No. 52, National Recreation and Park Association

1700 Pennsylvania Avenue, N.W. • Washington, D. C. 20006

ADMINISTRATION ON AGING
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Directory of State Agencies on Aging
Designated to Implement Title III of the Older Americans Act

ALABAMA
Chairman
Alabama Commission on Aging
454 South Decatur Street
Montgomery 36104

ALASKA
Director
Department of
Health and Welfare
Division of Welfare
Pouch H, Health and Welfare Bldg.
Juneau 99801

ARIZONA
Commissioner
Arizona State
Department of Health
Division of Planning and
Technical Support
1624 West Adams Street
Phoenix 85007

ARKANSAS
Director
Office on Aging
State Capitol Building
Little Rock 72201

CALIFORNIA
Chairman
Commission on Aging
1108 - 14th Street
Sacramento 95814

COLORADO
Director
Colorado Department of
Public Welfare
Older Americans Division
1600 Sherman Street
Denver 80203

CONNECTICUT
Chairman
Commission on Services for
Elderly Persons
165 Capitol Avenue
Hartford 06115

DELAWARE
Chairman
Delaware Commission on Aging
P. O. Box 57
Smyrna 19977

DISTRICT OF COLUMBIA
Chairman
D. C. Department of Public
Welfare
499 Pennsylvania Avenue, N.W.
Room 300
Washington, D. C. 20004
Executive Secretary
206 Indiana Avenue, N.W.
1st Floor, Room 101
Washington, D. C. 20001

FLORIDA
Chairman
Florida Commission on Aging
1309 Thomasville Road
Tallahassee 32303

GEORGIA
Chairman
State Commission on Aging
Room 224
881 Peachtree Street, N.E.
Atlanta 30309

GUAM
Director
Department of
Public Health and Welfare
Government of Guam
Agana 96910

HAWAII
Chairman
State Commission on Aging
1040 Ahiahi Street
Honolulu 96817

IDAHO
Commissioner
State Department of
Public Assistance
Continental Life Building
Boise 83701

ILLINOIS
Director
Illinois Department of
Public Aid
400 South Spring Street
Springfield 62706

INDIANA
Chairman
Indiana Commission on the
Aging and Aged
1015 New State Office Building
Indianapolis 46204

IOWA
Chairman
Iowa Commission on Aging
Suite 105
East 13th and Court Street
Des Moines 50319

KANSAS
Chairman
Kansas Board of Social Welfare
Division of Services for the
Aging
State Office Building
Topeka 66612

KENTUCKY
Chairman
Kentucky Commission on Aging
State Office Building
207 Holmes Street
Frankfort 40601

LOUISIANA
Chairman
Louisiana Commission on the
Aging
P. O. Box 44282, Capitol Station
Baton Rouge 70804

MAINE
Commissioner
Department of
Health and Welfare
State House
Augusta 04330

MARYLAND
Chairman
Maryland Commission on the
Aging
State Office Building
301 West Preston Street
Baltimore 21201

MASSACHUSETTS
Chairman
Massachusetts Commission on
Aging
19 Milk Street
Boston 02109

MICHIGAN
Chairman
Michigan Commission on Aging
1101 South Washington Avenue
Lansing 48913

MINNESOTA
Chairman
Governor's Citizens Council on
Aging
555 Wabasha, Room 204
St. Paul 55101

MISSOURI
Administrative Assistant of
Urban Affairs
Office of State and Regional
Planning and Community
Development
801 Jefferson Building
Jefferson City 65101

MONTANA
Chairman
Montana Committee on
Problems of the Aging
Room 301
Veterans and Pioneer Memorial
Building
Helena 59601

NEBRASKA
Special Consultant on Aging
Nebraska Advisory Committee
on Aging
Governor's Office
State Capitol Building
Lincoln 68509

NEVADA
Director
Department of
Health and Welfare
State Division of Welfare
201 South Fall Street
Carson City 89701

NEW HAMPSHIRE
Chairman
New Hampshire Commission for
the Older Americans Act
c/o Governor's Office
State House
Concord 03301

NEW JERSEY
Director
New Jersey Division on Aging
P. O. Box 1540, John Fitch Plaza
Trenton 08626

NEW MEXICO
Director
New Mexico Department of
Public Welfare
Division of Community Services
P. O. Box 2348
Santa Fe 87501

NEW YORK
Director
New York State
Office for the Aging
11 North Pearl Street
Albany 12207

NORTH CAROLINA
Chairman
Governor's Coordinating
Council on Aging
Administration Building
116 West Jones Street
Raleigh 27603

NORTH DAKOTA
Chairman
Governor's Council on
Human Resources
State Capitol Building
Bismarck 58501

OHIO
Director
Department of Mental Hygiene
and Correction
65 South Front Street
Columbus 43215

OKLAHOMA
Director
Oklahoma Department of
Public Welfare
Box 53161, Capitol Station
Oklahoma City 73105

OREGON
Chancellor, Office of Aging
State System of
Higher Education
147 Moss Street
Eugene 97403

PENNSYLVANIA
Commissioner
Department of Public Welfare
Health and Welfare Building
Harrisburg 17120

PUERTO RICO
Secretary of Health
Department of Health
Gericulture Commission
P. O. Box 9342
Santurce 00908

RHODE ISLAND
Chairman
Rhode Island State
Division on Aging
25 Hayes Street
Providence 02908

SOUTH CAROLINA
Chairman
South Carolina Interagency
Council on Aging
1001 Main Street
Columbia 29201

TENNESSEE
Chairman
Tennessee Commission on
Aging
C2–211 Central Services
Building
Nashville 37219

TEXAS
Chairman
Governor's Committee on Aging
Box 12125, Capitol Station
Austin 78711

UTAH
Chairman
Utah Council on Aging
Room 140
State Capitol Building
Salt Lake City 84114

VERMONT
Chairman
Interdepartmental Council on
Aging
Administration Building
Montpelier 05602

VIRGINIA
Chairman
Commission on the Aging
9th Floor
9th Street Office Building
Richmond 23219

VIRGIN ISLANDS
Commissioner
Insular Department of
Social Welfare
P. O. Box 539
Charlotte Amalie
St. Thomas 00801

WASHINGTON
Director
Department of Public Assistance
State Council on Aging
P. O. Box 1162
Olympia 98501

WEST VIRGINIA
West Virginia Commission on
Aging
Room 410, Professional Building
1036 Quarrier Street
Charleston 25301

WISCONSIN
Chairman
State Commission on Aging
115 West Wilson
Madison 53702

MENTAL RETARDATION PLANNING COORDINATORS

ALABAMA
Mental Retardation Planning Project
University of Alabama Medical Center
1919–7th Avenue South
Birmingham 35333

ALASKA
Mental Retardation Coordinator
Department of Health & Welfare
Division of Mental Health
Alaska Office Building
Juneau 99801

ARIZONA
Chief, Mental Retardation Section
State Department of Health
1624 West Adams Street
Phoenix 85007

ARKANSAS
Mental Retardation Planner
State Board of Health
Little Rock 72115

CALIFORNIA
Coordinator, Mental Retardation Program
Health and Welfare Agency
Room 1020, State Capitol
Sacramento 95814

COLORADO
Coordinator, Mental Retardation Planning Project
State Department of Institutions
328 State Services Building
Denver 80203

CONNECTICUT
Division of Mental Retardation Services
Office of Mental Retardation
State Department of Health
79 Elm Street
Hartford 06103

DELAWARE
Office of the Governor
State of Delaware
Dover 19901

DISTRICT OF COLUMBIA
Coordinator for Mental Retardation Planning
Department of Public Health
Room 4124
300 Indiana Avenue, N. W.
Washington, D. C. 20001

FLORIDA
Board of Commissioners of State Institutions
Division of Mental Retardation
908 Bronough Street
Tallahassee 32301

GEORGIA
Mental Retardation Planning Coordinator
Georgia Mental Retardation Institute
1256 Braircliff Road, N. E.
Atlanta 30306

HAWAII
Mental Retardation Planning Coordinator
Department of Health
Post Office Box 3370
Honolulu 96801

IDAHO
Executive Director, Mental Retardation Planning
Department of Health
State House
Boise 83701

ILLINOIS
Assistant Director, Division of Mental Retardation Services
Department of Mental Health
401 South Spring Street
Springfield 62704

INDIANA
Mental Retardation Planning Coordinator
Department of Mental Health
1315 West Tenth Street
Indianapolis 46207

IOWA
Mental Retardation Planning Coordinator
Board of Control of State Institutions
State Office Building—6th Floor
Des Moines 50319

KANSAS
Mental Retardation Planner
Board of Social Welfare
Division of Institutional Management
600–N State Office Building
Topeka 66603

KENTUCKY
Department of Mental Health
P. O. Box 678
Frankfort 40601

LOUISIANA
Coordinator of Mental Retardation Planning
State Department of Hospitals
655 North Fifth Street
Baton Rouge 70804

MAINE
Executive Secretary
Maine Committee on Problems of the Mentally Retarded
State Office Building, Room 700
Augusta 14330

MARYLAND
Coordinator, Mental Retardation Planning Project
State Board of Health and Mental Hygiene
301 West Preston Street
Baltimore 21201

MASSACHUSETTS
Coordinator
Mental Retardation Planning Project
330 Dartmouth Street, Apt. 5N
Boston 02116

MICHIGAN
Department of Mental Health
Lewis Cass Building
Lansing 48913

MINNESOTA
Executive Director
Mental Retardation Planning Project
Department of Public Welfare
Centennial Building
St. Paul 55101

MISSISSIPPI
Coordinator, Mental Retardation Planning Program
Mississippi State Board of Health
Post Office Box 1700
Jackson 39205

MISSOURI
Mental Retardation Planning Coordinator
Division of Mental Diseases
Department of Public Health and Welfare
722 Jefferson Street
Post Office Box 687
Jefferson City 65102

MONTANA
State Department of Health
Mental Retardation Planning Project
Laboratory Building
Helena 59601

NEBRASKA
Nebraska Psychiatric Institute
418–424 South 40th Street
Omaha 68131

NEVADA
Coordinator, Mental Retardation
790 Sutro Street
Reno 89502

NEW HAMPSHIRE
Director, Mental Retardation and Planning Project
Division of Mental Health
New Hampshire Hospital
Concord 03301

NEW JERSEY
Mental Retardation Planner
Division of Mental Retardation
Dept. of Institutions and Agencies
State Office Building
135 West Hanover Street
Trenton 08625

NEW MEXICO
Coordinator
Mental Retardation Project
State Planning Office
130 South Capitol
Santa Fe 87501

NEW YORK
Coordinator, Mental Retardation Planning Project
Department of Mental Hygiene
119 Washington Avenue
Albany 12225

NORTH CAROLINA
Executive Director, Council on Mental Retardation
Post Office Box 10426
Raleigh 27605

NORTH DAKOTA
Department of Health
State Capitol
Bismarck 58501

OHIO
Coordinator, Mental Retardation Planning
Department of Mental Hygiene
1208 Ohio Department Building
Columbus 43215

OKLAHOMA
Mental Retardation Planning Coordinator
Department of Public Welfare
Sequoyah Building
Post Office Box 531
Oklahoma City 73101

OREGON
Mental Health Division
State Board of Control
5 Capitol Building
Salem 97301

PENNSYLVANIA
Office of Mental Retardation
Department of Public Welfare
Harrisburg 17120

PUERTO RICO
Planning Director, Commonwealth of Puerto Rico
Santurce 00908

RHODE ISLAND
Department of Health
321 State Office Building
Providence 02906

SOUTH CAROLINA
Executive Director, Governor's Interagency Council on Mental Retardation Planning
1001 Main Street, Room 205
Columbia 29201

SOUTH DAKOTA
Director, Mental Retardation Planning Section
State Department of Health
Pierre 57501

TENNESSEE
Department of Mental Health
300 Cordell Hull Building
Nashville 37219

TEXAS
Planning Director, Department of Mental Health and Mental Retardation
Box S, Capitol Station
Austin 75711

UTAH
Department of Health
44 Medical Drive
Salt Lake City 84113

VERMONT
Acting Coordinator, Office of Mental Retardation Planning
Pavilion Hotel
Montpelier 05602

VIRGINIA
Coordinator, Mental Retardation Planning Council
1103 East Main Street
Richmond 23219

VIRGIN ISLANDS
Division of Mental Health
Department of Health
P. O. Box 1442
Charlotte Amalie
St. Thomas

WASHINGTON
Coordinator, Mental Retardation Planning
Governor's Committee on Mental Health and Mental Retardation Planning
1209 N. E. 41st Street
Seattle 98105

WEST VIRGINIA
Planning Coordinator
West Virginia Commission on Mental Retardation
1724 Washington Street, E.
Charleston 25311

WISCONSIN
Director, Comprehensive Mental Retardation Planning
Division of Mental Hygiene
Department of Public Health
1 West Wilson Street
Madison 53702

WYOMING
Director, Mental Retardation Planning and Program Development
Department of Public Health
State Office Building
Cheyenne 82001

REGIONAL OFFICES OF THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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120 Boylston Street
Boston, Massachusetts 02116
Telephone 617 482-6550

Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Region II

Room 1200, 42 Broadway
New York, New York 10004
Telephone 212 363-4600

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700 East Jefferson Street
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Telephone 703 296-1220

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50 Seventh Street, N.E.
Atlanta, Georgia 30323
Telephone 404 526-5817

Alabama, Florida, Georgia Mississippi, South Carolina, Tennessee

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Room 712, New Post Office Building
433 West Van Buren Street
Chicago, Illinois 60607
Telephone 312 828-4400

Illinois, Indiana, Michigan Ohio, Wisconsin

Region VI

560 Westport Road
Kansas City, Missouri 64111
Telephone 816 221-5201

Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

Region VII

1114 Commerce Street
Dallas, Texas 75202
Telephone 214 749-3396

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Region VIII

Room 551, 621 Seventeenth Street
Denver, Colorado 80202
Telephone 303 297-3373

Colorado, Idaho, Montana, Utah, Wyoming

Region IX

50 Fulton Street
San Francisco, California 94102
Telephone 415 556-6746

Alaska, Arizona, California, Hawaii, Nevada, Oregon, Washington, Guam, American Samoa

REGIONAL OFFICES OF THE BUREAU OF OUTDOOR RECREATION

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Regional Director
128 N. Broad Street
Philadelphia, Pennsylvania 19102

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Regional Director
810 New Walton Building
Atlanta, Georgia 30303

Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Tennessee, Virgin Islands, Virginia

Lake Central Region

Regional Director
3853 Research Park Drive
Ann Arbor Michigan 48104

Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Ohio, Wisconsin

Mid-Continent Region

Regional Director
Building 41
Denver Federal Center
Denver, Colorado 80225

Colorado, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Wyoming

Pacific Northwest Region

Regional Director
U. S. Court House
Room 407
Seattle, Washington 98104

Alaska, Idaho, Montana, Oregon, Washington

Pacific Southwest Region

Regional Director
Box 36062
450 Golden Gate Avenue
San Francisco, California 94102

American Samoa, Arizona, California, Guam, Hawaii, Nevada, Utah

SELECTED REFERENCES

1. American Association of Retired Persons. *Modern Maturity.* 1346 Connecticut Avenue, N. W., Washington, D. C. (Monthly periodical).

2. American Foundation for the Blind. *Recreation for the Blind.* Educational series No. 1. New York, 1951.

3. Athletic Institute, The. *Planning Areas and Facilities for Health, Physical Education, and Recreation.* Chicago: The Institute, 1965. (This edition includes a reprint of "U.S.A. Standard Specifications for making Buildings and Facilities Accessible to, and Usable by, The Physically Handicapped.")

4. Avedon, Elliott M., John Gehan and Donald E. Hawkins. *Activating Community Resources for Therapeutic Recreation Services.* New York: Comeback, Inc., 1966.

5. Avedon, Elliott M. "Outdoor Facilities for the Aged and Disabled," *Parks and Recreation.* Vol. I, no. 5 (May 1966), pp. 426-429, 441. (Problems of persons with physical limitations in using outdoor facilities. Suggestions for modifying facilities).

6. British Red Cross Society. *Practical Aids for the Disabled.* London: The Society, 14 Grosvenor Crescent, S. W. 1, 1964, 47 pp. (Directions for making simple aids for use in everyday living, including recreation).

7. Carlson, Bernice, and David R. Gingland. *Play Activities for the Retarded.* Nashville, Tennessee: Abingdon Press, 1961.

8. Case, Maurice. *Recreation for Blind Adults—Organized Programs in Specialized Settings.* Springfield, Illinois: Charles C. Thomas, 1966.

9. Chapman, Frederick M. *Recreation Activities for the Handicapped.* New York: Ronald Press, 1960. ($5.75).

10. Commission on Standards and Accreditation of Services for the Blind. *The Comstac Report: Standards for Strengthening Services,* New York: National Accreditation Council on Agencies Serving the Blind and Visually Handicapped, 1966.

11. Crandall, Mae. *Recreation for Nursing Home Residents.* North Carolina: State Board of Health, North Carolina Association of Nursing Homes and The Nursing Home and Chronic Disease Section.

12. Donahue, Wilma. *Free Time: Challenge to Later Maturity.* Ann Arbor, Michigan: University of Michigan Press, 1958. ($4.50)

13. Felleman, Carroll. "Integration of Blind Children in a Recreational Setting," *New Outlook for the Blind.* Vol. 54, no. 7 (September 1961), pp. 252-258.

14. Goldsmith, Selwyn. *Designing for the Disabled.* London: Royal Institute of British Architects Technical Information Service, 1963. (An encyclopedia of design problems involved in planning buildings, homes, and other facilities, 236 pp.)

15. Gould, Kay, and David Gingland. *Day Camping for the Mentally Retarded.* New York: National Association for Retarded Children, 1962.

16. Gross, Selma W. *Opening the Door to Creative Experience for the Aging through an Art Program.* Baltimore, Maryland: Commission on Problems of the Aged, Mayor's Office. ($1.00)

17. Herzog, John D. "Boys and Girls Together—Handicapped and Able-Bodied," *Recreation Magazine.* June 1965.

18. Hillman, William A., Jr. "Therapeutic Recreation with the Profoundly Retarded," *Recreation for the Ill and Handicapped.* April 1966.

19. Hirdic, James F., Jr. *Organizing a Senior Citizens Club.* Manchester, Connecticut: Department of Recreation. ($1.50)

20. Hunt, Valerie V. *Recreation for the Handicapped.* New York: Prentice Hall, Inc., 1955.

21. Indiana University Department of Recreation, School of Health, Physical Education and Recreation. *Camping for Emotionally Disturbed Boys.* Bloomington, Indiana.

22. *International Journal for the Education of the Blind,* "Ten Active Games for Blind Children." Vol. 4, no. 3 (March 1955).

23. Jokl, Ernest. *What is Sports Medicine?* Springfield, Illinois: Charles C. Thomas, 1964.

24. Lucas, Carol. *Recreational Activity Development for the Aging in Homes, Hospitals, Nursing Homes.* Springfield, Illinois: Charles C. Thomas, 1962. ($4.25)

25. Lauridsen, Kirsten V. "Wheelchairs," *Communications, Testing, and Observation.* Vol. 17, 1964, pp. 3-19. (Publication is available in English from the Danish National Association for Infantile Paralysis, Hellerup, Denmark).

26. Layman, Emma McCloy. *Mental Health through Physical Education and Recreation.* Minneapolis, Minnesota: Burgess Publishing Co., 1955.

27. Lemonnier, Marie-Louise. "Progress in the Elimination of Architectural Barriers," *World Veteran.* Vol. 152 (March 1965), pp. 17-19. (Progress in Denmark, Sweden, Norway, Finland, The Netherlands, Great Britain, Germany, the U.S., Japan, and France is reported).

28. Mathiasen, Geneva, and Edward Noakes. *Planning Homes for the Aged.* New York: F. W. Dodge Corporation, 1959 ($12.75).

29. National Recreation and Park Association. *Recreation and Parks.* 1700 Pennsylvania Avenue, N. W., Washington, D. C. (Monthly periodical).

30. National Society for Crippled Children and Adults. *Rehabilitation Literature.* 2023 West Ogden Avenue, Chicago 12, Illinois. (Monthly periodical)

31. Nice, William, and Kenneth Benson. *Crafts for the Retarded.* Bloomington, Illinois: McKnight and McKnight, 1964.

32. The North Carolina Recreation Commission. *Recreation for Later Maturity.* Raleigh, North Carolina. (Free publication).

33. Nugent, T. J. "Let's Look Beyond," *Recreation in Treatment Centers.* Vol. 3, 1964, pp. 33-42. Washington, D. C.: National Recreation and Park Association. (Subjective experience of college administrator in an ideal situation for undergraduate students with physical limitations, and thoughts on the problem of community barriers).

34. O'Brien, Sylvia B., *More Than Fun.* New York: United Cerebral Palsy Association, Inc.

35 Ontario Association for Retarded Children. *A Manual for Camps of the Ontario Association for Retarded Children.* Ontario, Canada 1961-62.

36. "Planning for the Disabled," *Rehabilitation.* Vol. 51 (October 1964), pp. 39-43. (Architectural and social study of housing and public building requirements of disabled persons).

37. Pomeroy, Janet. *Recreation for the Physically Handicapped.* New York: Macmillan Co., 1964. ($7.95)

38. *Proceedings of the National Institute on Making Buildings and Facilities Accessible and Usable by the Physically Handicapped.* Chicago: National Society for Crippled Children and Adults, 1965.

39. Public Health Service, United States Department of Health, Education, and Welfare. *Planning of Facilities for the Mentally Retarded.* Washington, D. C.

40. Public Health Service, United States Department of Health, Education, and Welfare. *National Mental Health Program and the States.* Washington, D. C. No. 629, reprinted, 1953.

41. Rees, Elizabeth L. *A Doctor Looks at Toys.* Springfield, Illinois: Charles Thomas, 1961. (Implications of various kinds of toys in relation to different disabilities).

42. Rosenberg, Charlot. *Simple Self-Help Devices to Make for the Handicapped.* Atlanta, Georgia: Damon & Kaye Printing Co., 1965. (Devices for daily living, including recreation, especially for persons with cerebral palsy).

43. Rusalem, Herbert, et al. "Architectural Barriers to the Participation of Disabled Persons in Community Recreation Activities," *Journal of Chronic Disease.* Vol. 18 (February 1965), pp. 161-166. (Survey of 139 agencies in New York City).

44. Schoenbohm, Wilko, and R. W. Schwanke. "Barriers to Service," *Recreation.* (May 1962), pp. 251,252,268. (Architectural features which prevent persons from using recreation facilities).

45. Schoenbohm, W. B. *Planning and Operating Facilities for Crippled Children.* Springfield, Illinois: Charles C. Thomas, 1962.

46. Schwartz, Arthur. *Research Report: Social and Recreation Patterns of Orthopedically Handicapped Children.* New York: Associated YM-YWHA's of Greater New York.

47. Sember, Andrew T. *A Critique of Summer Recreational and Craft Activities for Mentally Retarded Children.* Training School Bulletin (November 1957), pp. 34-47. Vineland, New Jersey: Vineland Training School.

48. Smith, John G. "Swimming Pool Survey," *MR/Mental Retardation.* Vol. III, no. 3 (June 1965), pp. 22,23. (Surveys all public institutions listed in AAMD directory for 1960. Covers number, type, financing, equipment, and adaptations made).

49. Smith, Marshal. "Blind Children of the Playground," *Recreation.* Vol. 55, no. 4 (April 1962), pp. 196,197.

50. Spencer, Marietta B. *Blind Children in Family and Community,* Minneapolis, Minnesota: University of Minnesota Press, 1960.

51. Stafford, George T. *Sports for the Handicapped.* New York: Prentice Hall, Inc. 1939.

52. Stein, Julian U. "The Mentally Retarded Need Recreation," *Parks and Recreation.* Vol. I, no. 7 (July 1966), pp. 574-578.

53. Stevenson, G. "A Community Program for the Mentally Retarded," *American Journal of Mental Deficiency.* April 1952.

54. Thompson, Morton. *Recreation for the Homebound Person with Cerebral Palsy.* New York: United Cerebral Palsy Association, 1963.

55. Thompson, Morton. *Starting a Recreation Program in Institutions for the Ill and Handicapped Aged.* Washington, D. C.: National Recreation and Park Association. ($1.25)

56. Tibbets, Clark, and Wilma Donahue. *Aging in the Modern World, A Book of Readings, A Handbook for Group Numbers,* and *A Guidebook for Leaders.* Ann Arbor, Michigan: University of Michigan Press. ($3.00 set)

57. Turner, J. A. "What the Playground Can Do for the Handicapped Child," *Recreation.* April 1955, 178 pp.

58. United States of America Standards Institute. *U.S.A. Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped.* 10 East 40th Street, New York, New York 10016. (Copies also may be obtained from the President's Committee on Employment of the Handicapped, Washington, D. C. 20210, or the National Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois 60612).

59. Watson, Donald P., and Alice W. Burlingame. *Therapy through Horticulture.* New York: The Macmillan Co., 1960. ($4.95)

BIBLIOGRAPHIES

60. *A Guide to Books on Recreation.* National Recreation and Park Association, 1700 Pennsylvania Avenue, Washington, D. C., 1966.

61. McKinley, D. L. *Bibliography: A Source List of Wheel Chair Data.* Wayland, New York: The Compiler, 1965. (Over 200 references to sources of information on the subject).

62. *Recreation for the Handicapped: A Bibliography.* Carbondale, Illinois: Illinois University, 1965. (Information Center-Recreation for the Handicapped c/o Little Grassy Facilities).

63. *Recreation for the Physically Handicapped: A Selection of Recent Books and Pamphlets.* Chicago: National Society for Crippled Children and Adults, 1963.

64. *Selected Bibliography for Programming Physical Education and Recreation Activities for the Mentally Retarded.* American Association for Health, Physical Education, and Recreation, 1966.

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DEPARTMENT OF THE INTERIOR
Stewart L. Udall, Secretary

Bureau of Outdoor Recreation
Washington, D.C. 20240